GN-WBZB-M

IEEE 802.11b USB Wireless LAN Card

User's Manual

http://www.gigabyte.com.tw

Rev. 1.0 First Edition

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cmbetween the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Contents

CHAPTER 1. PRODUCT OVERVIEW 1

1-1. INTRODUCTION TO THE WIRELESS LAN CARD 1
1-2. FEATURES 1
1-3. PHYSICAL DIMENSIONS/PACKAGING 1
1-4. LED INDICATING LIGHTS 2
1-5. SYSTEM REQUIREMENTS 2

CHAPTER 2. INSTALLING THE WIRELESS LAN CARD 3

2-1. INSTALLING THE WLAN CARD FOR PC 3
2-2. INSTALLING THE DRIVER & UTILITY FOR PC 3

CHAPTER 3. USING THE UTILITY ON PC 6

3-1. INFO 6
3-2. STATISTICS 7
3-3. CONFIGURATION 7
3-4. ENCRYPTION 8
3-5. ADVANCED 9
3-6. ABOUT 10
3-7. ACCESS POINT (SUPPORTED UNDER WINDOWS XP) 10
3-8. BRIDGE SETUP (SUPPORTED UNDER WINDOWS XP) 12
3-9. IP SHARING (SUPPORTED UNDER WINDOWS 2000) 14

CHAPTER 4. SPECIFICATION 16

Chapter 1. Product Overview

1-1. Introduction to The Wireless LAN Card

This wireless LAN (Local Area Network) card is composed of the IEEE 802.11b MAC, Baseband, and radio components, USB 1.1 interface, and one external antenna. This product adopts the direct sequence spread spectrum (DSSS) technology and the DBPSK, DQPSK, and CCK modulation mode to provide a very stable wireless communication quality and an excellent signal receiver capability.
This product features the compact size, low power consumption, and power management functions, and provides a high-speed wireless data communication. Therefore, this product is ideally suitable for being integrated into the MotherBoard.

1-2. Features

- Conforms to IEEE 802.11b specification.
- Transmits data rate up to the maximum speed of 11Mbps.
- Dynamically scales the data rate to 11, 5.5, 2, and 1Mbps.
- Host Interface USB 1.1.
- One external antenna.
- Supports 64-bit /128-bit WEP encryption.
- Driver supports Windows 98SE/Me/2000/XP.
- Free Software Access Point.

1-3. Physical Dimensions/Packaging

Dimensions: 122mm* 48mm* 22mm

This product is only for INTEL USB2.0 Host connector

Before the installation procedures, please ensure the components are not damaged during the shipping. The shipment of the GN-WBZB-M includes:

One GN-WBZB-M Wireless LAN Card
One Antenna
One Connect Cable
One Installation CD (including User's Guide and Driver)
One User Guide

Please contact your local distributor or authorized reseller immediately for any missing or damaged components. If you require returning the damaged product, you must pack it in the original packing material or the warranty will be voided.

1-4. LED Indicating Lights

This wireless LAN card conforms to the USB standard. There are two LED-indicating lights. One indicates Power status. One indicates Link status.

- **Power:** This LED is continuously on while the card is powered on.
- **Link:**

Blinking Slow	The card is scanning the network.
Continuously On	The card is successfully connected to a network.
Blinking Quickly	The data is being transmitted/received

1-5. System Requirements

1-5-1. Supported Platform:

IBM PC/AT compatible computer

1-5-2. Supported Operation System:

Windows 98SE/Me/2000/XP

1-5-3. Software Access Point Supported Operation System:

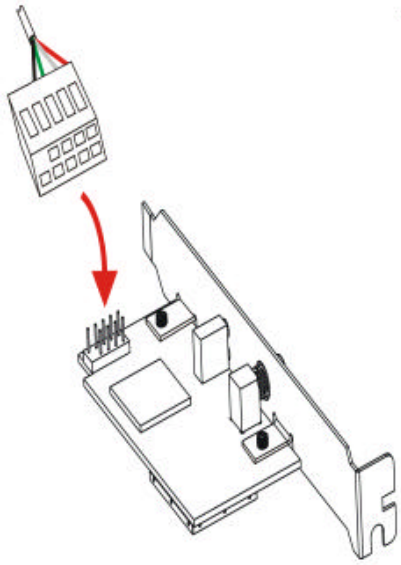
Windows XP

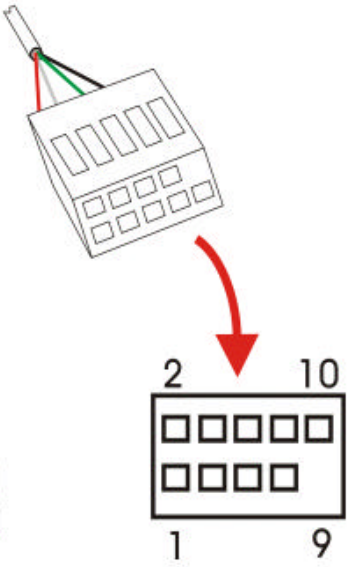
Chapter 2. Installing the Wireless LAN Card

2-1. Installing The WLAN Card for PC

Step 1: Power Off you PC

Step 2: Plug the WLAN Card to the USB Port of Mother Board and fasten it on the slot rack.

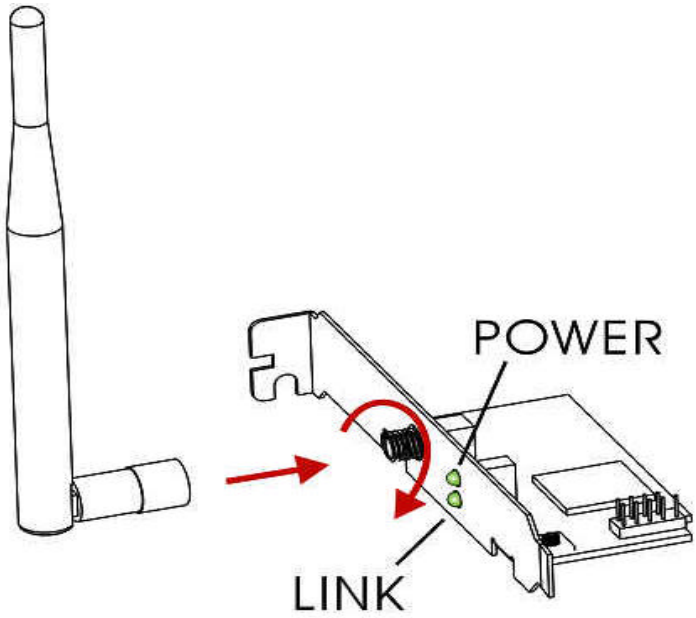




M/B
USB PORT

1	USB POWER
2	USB POWER
3	USB Dx −
4	USB Dy −
5	USB Dx +
6	USB Dy +
7	GND
8	GND
9	NO PIN
10	NC

Step 3: Plug the Antenna to the WLAN Card.



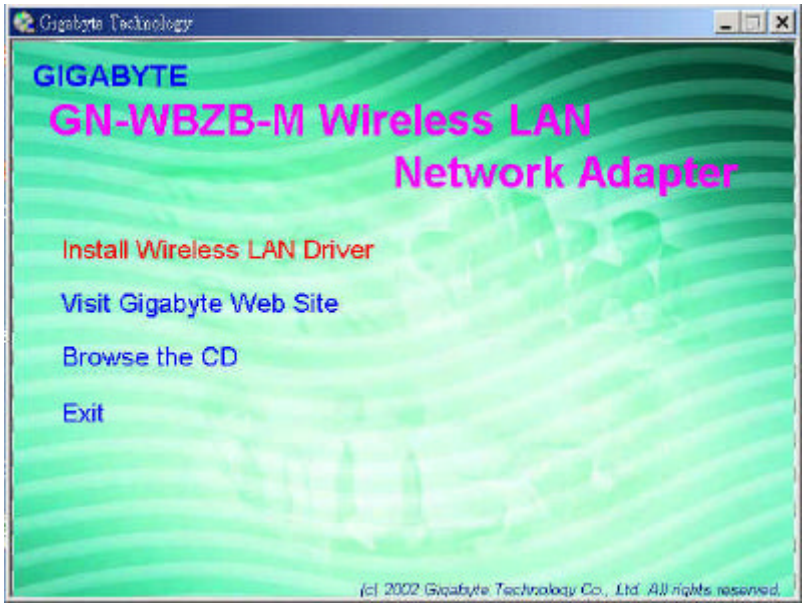
Step 4: Power On you PC

2-2. Installing The Driver & Utility for PC

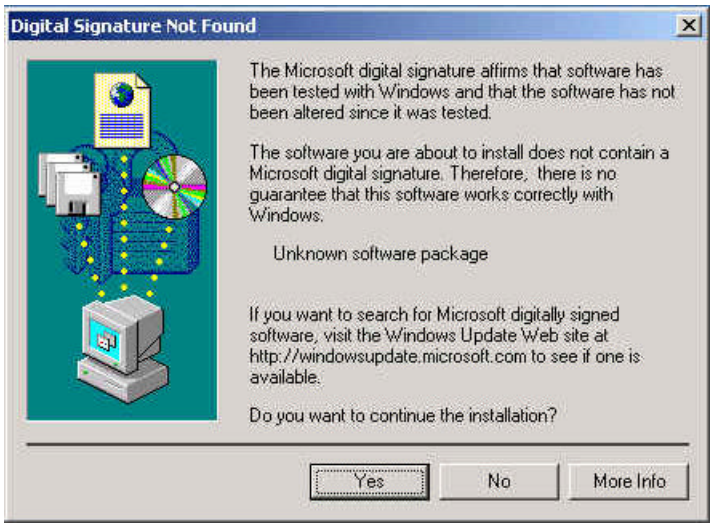
Step 1: Click "**Cancel**".

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install a device driver for a hardware device.
To continue, click Next.
< Back
Next >
Cancel

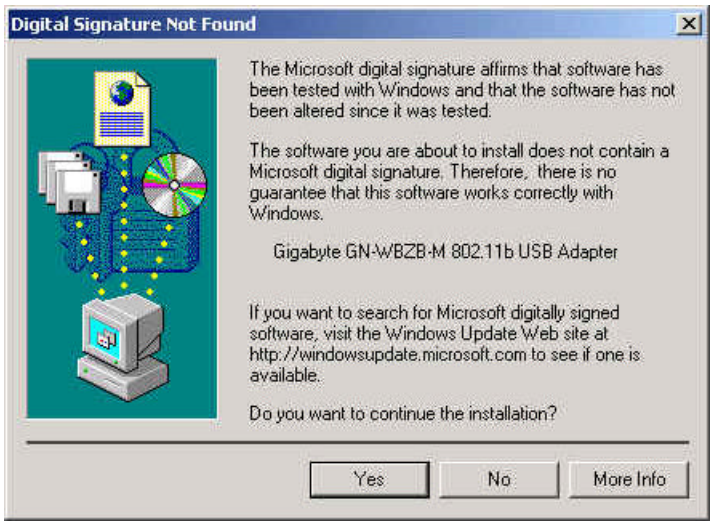
Step 2: Insert our setup CD into your CDROM drive, the following window will pop up



Step 3: Click "Yes", and then your installation is ok.


Digital Signature Not Found
The Microsoft digital signature affirms that software has been tested with Windows and that the software has not been altered since it was tested.
The software you are about to install does not contain a Microsoft digital signature. Therefore, there is no guarantee that this software works correctly with Windows.
Unknown software package
If you want to search for Microsoft digitally signed software, visit the Windows Update Web site at http://windowsupdate.microsoft.com to see if one is available.
Do you want to continue the installation?
Yes
No
More Info

Step 4: Reboot you computer
Step 5: Click "YES". and then your installation is ok.


Digital Signature Not Found
The Microsoft digital signature affirms that software has been tested with Windows and that the software has not been altered since it was tested.
The software you are about to install does not contain a Microsoft digital signature. Therefore, there is no guarantee that this software works correctly with Windows.
Gigabyte GN-WBZB-M 802.11b USB Adapter
If you want to search for Microsoft digitally signed software, visit the Windows Update Web site at http://windowsupdate.microsoft.com to see if one is available.
Do you want to continue the installation?
Yes
No
More Info

Chapter 3. Using The Utility on PC

The Configuration & Monitor Utility is a powerful application that helps you to configure the card and monitor the statistics of the communication link. Unlike the standard method of configuring the card via the operating system utilities (e.g. Control Panel), this application permits the dynamic modification of the configuration parameters while the card is operating. It also offers some more configuration options. It appears as an icon on the Windows system tray whenever the card is running (*see* ***Figure 3-1***). The icon can tell you the received signal strength by four small green lights. You can open it by double-clicking on this icon.

Figure 3-1. The icon of the Configuration & Monitor Utility

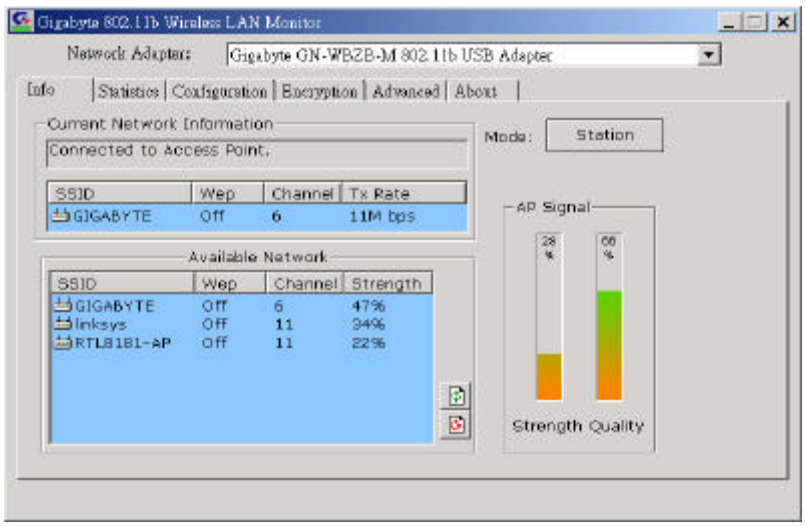
WLAN Mode

AP Mode

3-1. Info

The Info tab shows you the current Link States of the Wireless LAN Card and the Reachable Assess Points and the Wireless LAN Card**(***see* ***Figure 3-2*****)**.

Figure 3-2. Current link states of the wireless LAN card



Network Information: There are three states of a Wireless LAN Card:

1. Connected to Access Point**:** The wireless LAN card is now connecting to an Access Point.
2. Connected to Ad Hoct**:** The wireless LAN card is now connecting to a Peer-to-Peer network.
3. Connecting**:** The wireless LAN card is now searching for an Access Point or wireless LAN card with the same network name, or SSID for the connection.

Other items in the table are the detailed information about the link state, which are available only when the wireless LAN card is connected to an access point or other wireless LAN card.

SSID: Network name.

Channel: The current channel used by the wireless LAN card.

Tx Rate: The current transmission rate used by the wireless LAN card.

AP Signal: It shows the signal quality and signal intensity of the currently connected base station.

Available Network: This item will show you all of the 802.11 Access Points or Wireless LAN Cards in your wireless environment. The icon in the front of every item represents an Access Point or a Wireless LAN Card. You can add a network easily by clicking on the desired SSID.

Strength: It shows the signal quality and signal intensity of the currently connected base station.

Signal Quality: It is which represents the quality of communication between the Wireless LAN Card and Access Point.

Refresh( ): After this button is clicked, the wireless LAN card will rescan the wireless environment and show you all the updated reachable Access Points and Stations.

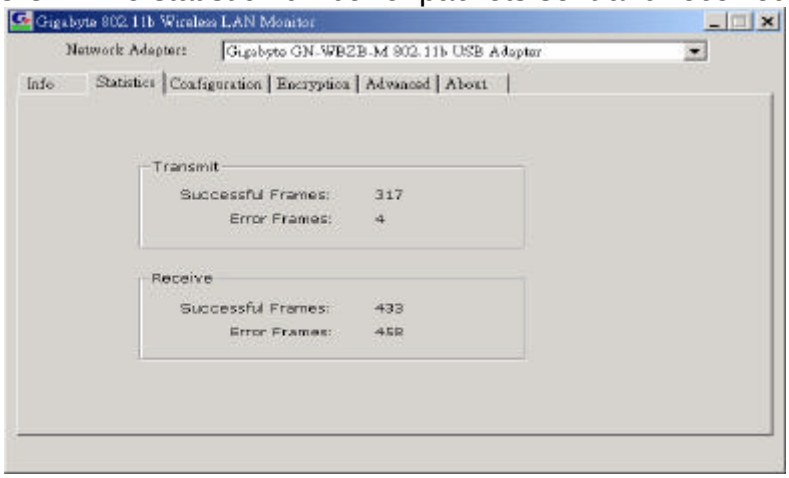
Connect( ): After this button is clicked, the wireless LAN card will connect the wireless environment reachable Access Points or wireless LAN card.

Mode(Station): The WLAN mode You can change AP mode(*see* ***3-8 Access Point***) by clicking on this button.

3-2. Statistics

The "**Statistics**" tab shows you the number of packets sent and received by the card(*see* ***Figure 3-3***).

Figure 3-3. The statistic number of packets sent and received by the card

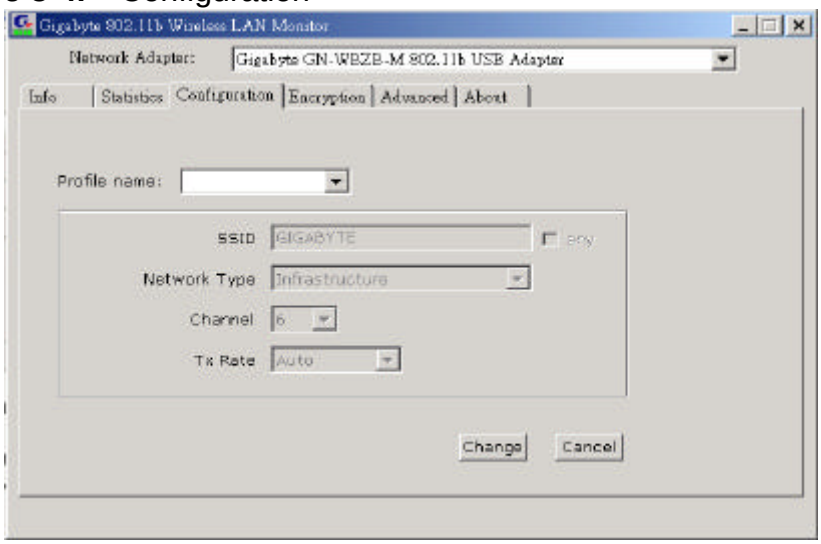


3-3. Configuration

The Configuration Tab contains several fields where operating parameters of the driver

can be viewed or changed. Changes to any of the parameters in this panel can be applied to the driver without resetting the wireless LAN card(*see* ***Figure 3-4***).

Figure 3-4. Configuration



Profile: You can save various wireless settings for different environments.

Change: Press this button to set the configuration in each field of the panel. The "Apply" button should be pressed before the default values are saved to the driver and registry.

Cancel: Press this button to restore the default value in each field of the panel.

SSID: It is also known as SSID and is the unique name shared among all access points (**Infrastructure**) or **Ad Hoc** (wireless LAN card) in the wireless network. The SSID must be identical for all points in the network for sharing information and communication. It is case sensitive and must not exceed 32 characters.

Network Type: This field allows you to select the network type from a list of supported Network "Modes". The modes displayed have two values: "Ad Hoc"(Peer-to-Peer)and "Infrastructure"(Access Point).

Ad Hoc: This is the 802.11 peer-to-peer mode of operation. All communications are done from Client to Client without using the base station. Peer-to-Peer networking uses the same SSID for establishing the wireless connection.

Infrastructure: This mode of operation requires the presence of an 802.11 Base Station. All communications are done via the Base Station, which relay packets to other wireless Clients in the BSS as well as the nodes on a connected network such as Ethernet.

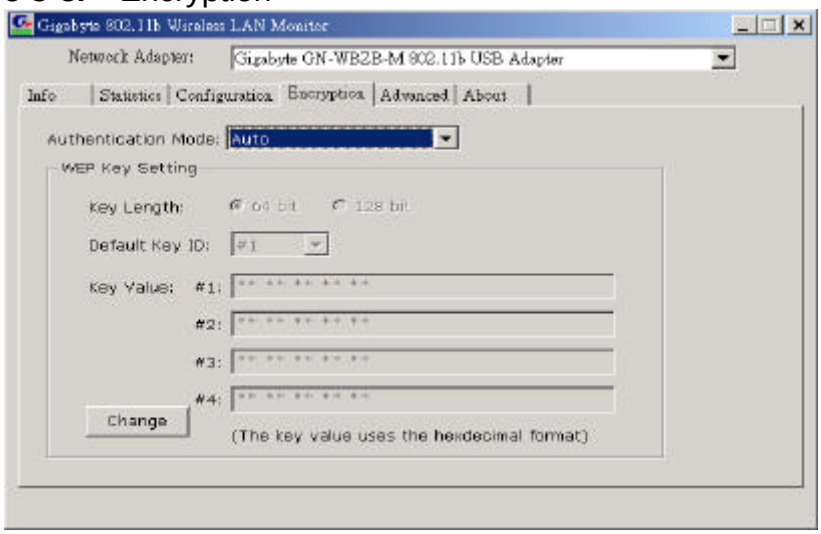
Channel: This specifies the channel used in wireless communication and should be set to the same channel as the other points in the wireless network. This setting can only be adjusted in Ad Hod mode.

TX Rate: The transmission rate for transmitting data packets at the user end. You may set the transmission rate to 1Mb, 2 Mb, 5.5 Mb, 11 Mb, or Fully Automatic.

3-4. Encryption

To prevent unauthorized user to access the data on wireless stations, the Wireless LAN Card offers a highly secure data encryption, known as WEP (Wired Equivalent Privacy). If you require high security in transmission, go to the **Encryption** tab and set it up as follows(*see* ***Figure 3-5***).

Figure 3-5. Encryption



Change: Press this button to set the configuration in each field of the panel. The "Apply" button should be pressed before the default values are saved to the driver and registry.

Key Length: select either 64bit or 128bit encryption method.
64 Bit –Allows wireless LAN card to encrypt data with the 64-Bit encryption algorithm.
128 Bit –Allows wireless LAN card to encrypt data with the 28-Bit encryption algorithm.

The **Encryption** tab enables you to identify up to 4 different encryption passwords and select one of them to encrypt your transmission data. The password of your choice may either be:

For 64-bit encryption:

- Five alphanumeric characters in the range of "a-z", "A-Z" and "0-9" (e.g. MyKey)
- 10 hexadecimal values in the range of "0-F" (e.g. 11AA22BB33).

For 128-bit encryption:

- 13 alphanumeric characters in the range of "a-z", "A-Z" and "0-9" (e.g. WEP encryption).
- 26 hexadecimal values in the range of "0-F" (e.g. 11AA22BB33123456789ABCDEFF).

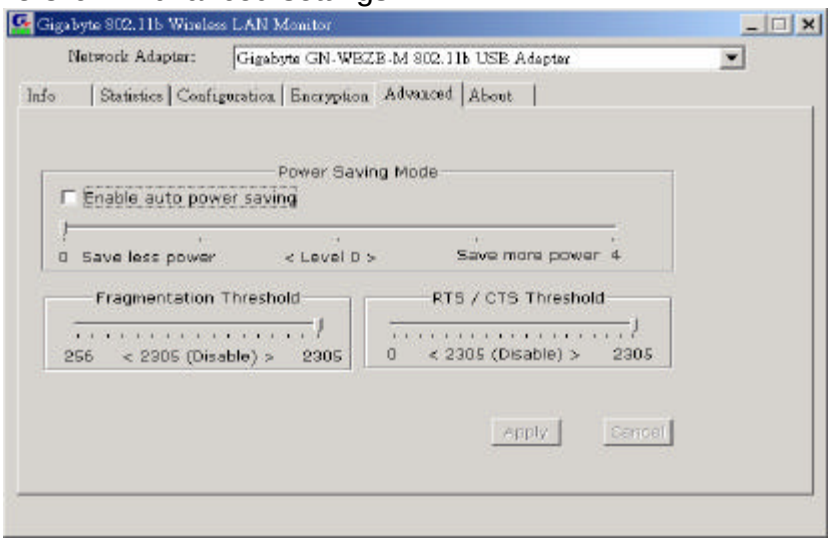
You have the option to select whether *Open System*, *Shared Key, or Auto* authentication will be used. In order to take effect the changes you wish to make, click the "**Apply**" button at the bottom of the screen.

3-5. Advanced

By Choosing the *Advanced* option in any of the two modes, you can change advanced configuration settings, such as the Fragmentation Threshold, and RTS/CTS Threshold (*see* ***Figure 3-6***). *Figure 3-6* shows the default configuration for the advanced settings.

Note: In order to enable the Fragmentation and the RTS/CTS Threshold parameters move the slide bar with your mouse and then use the right and left arrow keys of your keyboard in order to select an exact number.

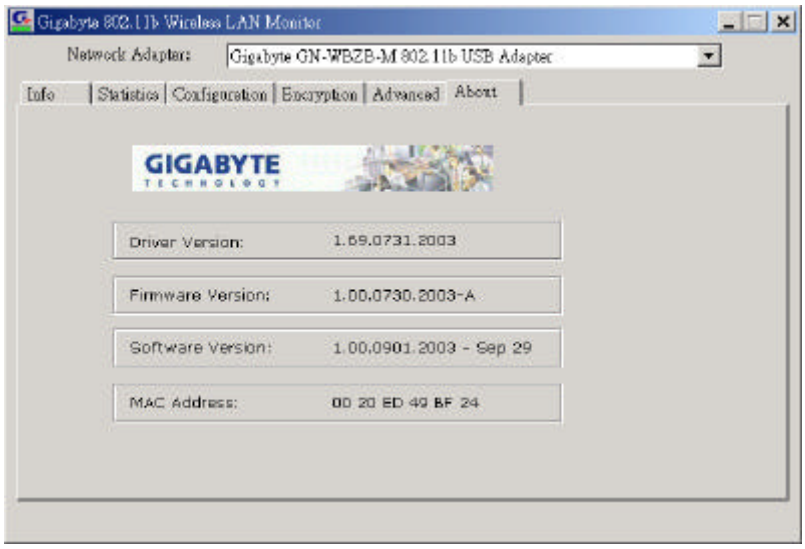
Figure 3-6. Advanced settings



3-6. About

By choosing this option, you can view basic information about the utility like the Driver, Firmware and Application Version and this adapter's MAC address (*see* ***Figure 3-7***).

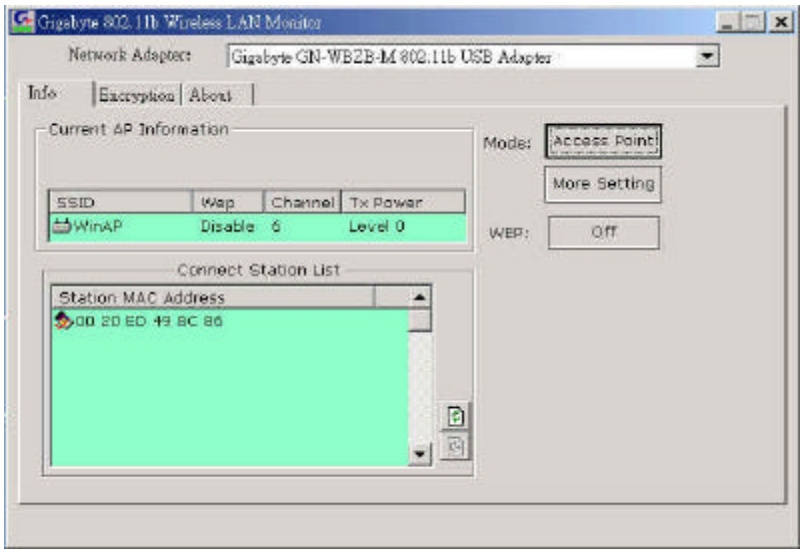
Figure 3-7. Version information and MAC address



3-7. Access Point *(Supported under Windows XP)*

The Info tab shows you the current Link States of the Assess Points and the Wireless LAN Card **(***see* ***Figure 3-8*****)**.

Figure 3-8. Current link states of the Access Point Mode

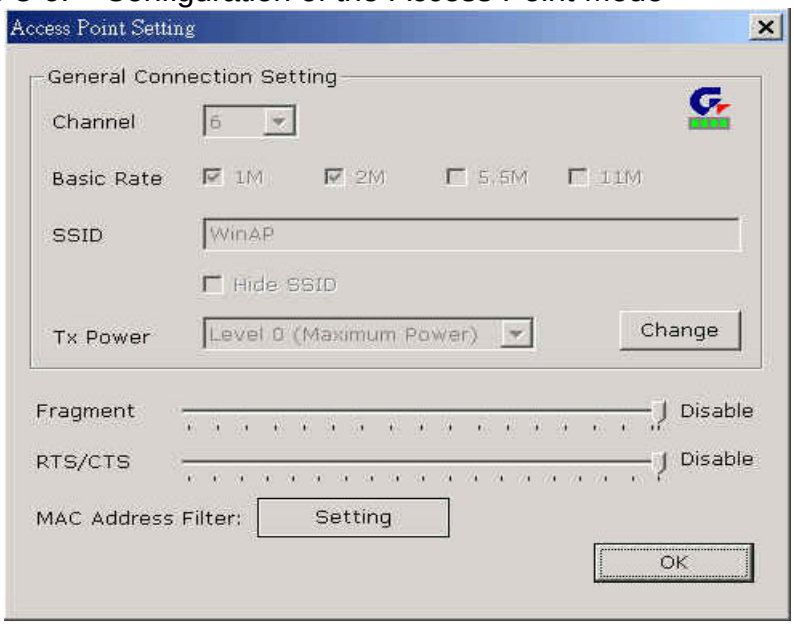


Access Point: The AP mode You can change WLAN mode(*see* ***3-1 Info***) by clicking on this button.

More Setting: You can set the configuration Access Point(*see* ***Figure 3-9***) by clicking on this button.

WEP(ON/OFF): You can using WEP (Wired Equivalent Privacy) by clicking on this button.

Figure 3-9. Configuration of the Access Point Mode



Change: Press this button to setting the default value in each field of the panel. The "Apply" button should be pressed before the default values are saved to the driver and registry.

Channel: The current channel used by the Access Point.

Basic Rate: The transmission rate for transmitting data packets at the user end. You may set the transmission rate to 1Mb, 2 Mb, 5.5 Mb, 11 Mb.

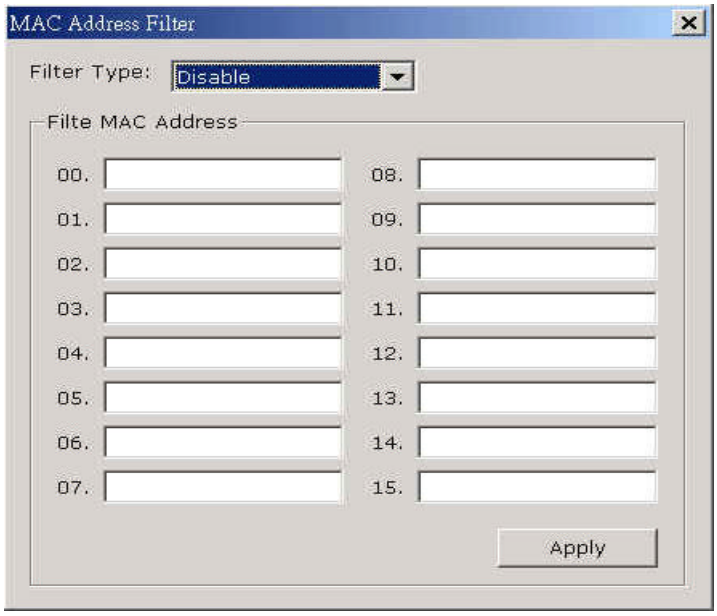
SSID: Network name.

Hide SSID: Access Point disable their SSID broadcasting to prevent a wireless device from finding and accessing their networks.

Tx Power: Transmitter Output power.

MAC Address Filter: You can set the configuration MAC Address Filter(*see* ***Figure 3-10***) by clicking on this button**.**

Figure 3-10. MAC Address Filter



Filter Type: There are three status of a Access Point:

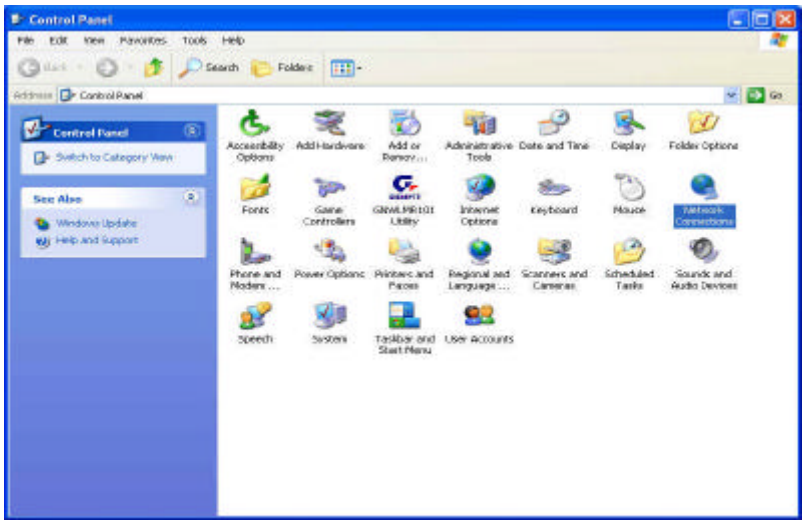
1. **Disable:** The Filter MAC Address function disable.
2. **Accept:** The Filter MAC Address (wireless LAN card) can connect to an Access Point.
3. **Reject:** The Filter MAC Address (wireless LAN card) can't connect to an Access Point.

3-8. Bridge Setup *(Supported under Windows XP)*

Step 1: Change to AP mode (*see* ***Figure 3-8***).

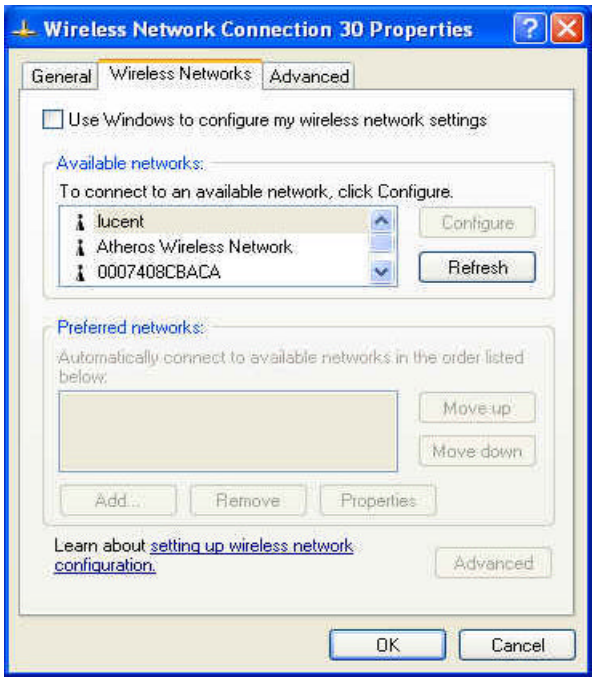
Step 2: 「**Control Panel**」run「**Network Connections**」 (*see* ***Figure 3-11***).

Figure 3-11. Control Panel



Step 3: Setup Wireless LAN card**(*see* *Figure 3-12*)**, Click **"**Use Windows to configure**"** to cancel the schedule and Click「**OK**」.

***Figure** 3-12.* Wireless Networks



Step 4：Select the network connections to be bridged. Press the「Ctrl」key while clicking the network connection icons to select. Right-click on any selected network icon. Select 「Bridge Connections」(*see* ***Figure 3-13***).
Show Network Bridge(*see* ***Figure 3-14***).

***Figure** 3-13.* Bridge Connections

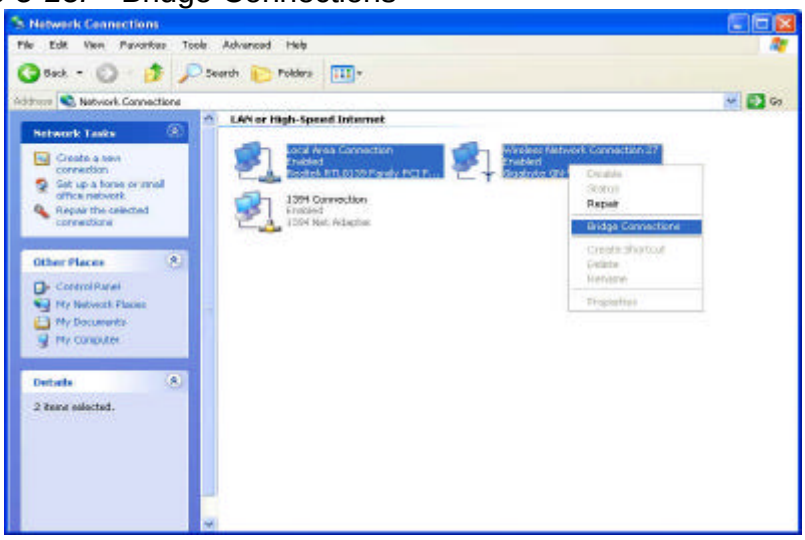
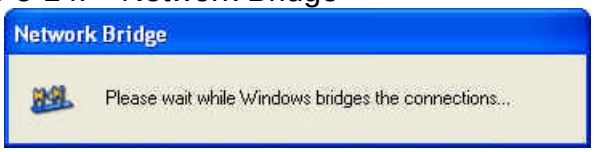
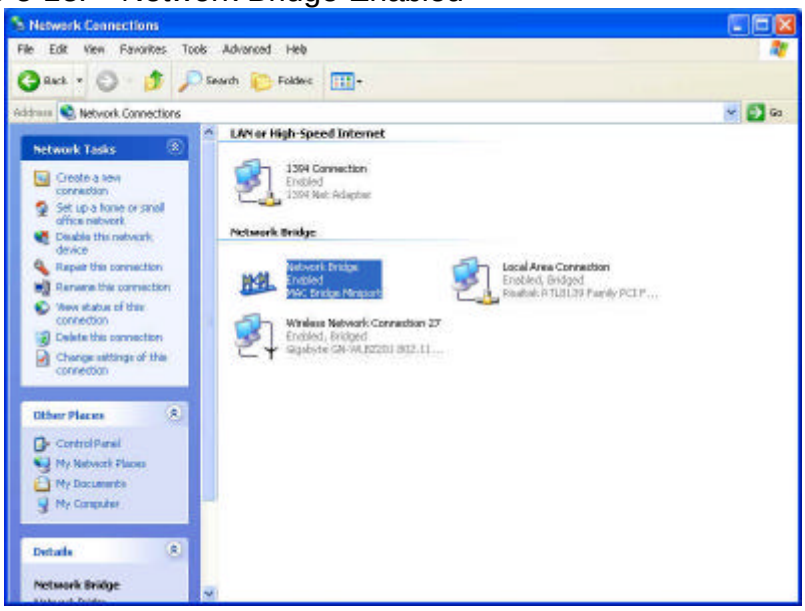


***Figure** 3-14.* Network Bridge



Step 5：Setup OK，Show Network Bridge windows(*see* ***Figure 3-15***) and then your setup is ok.

***Figure** 3-15.* Network Bridge Enabled

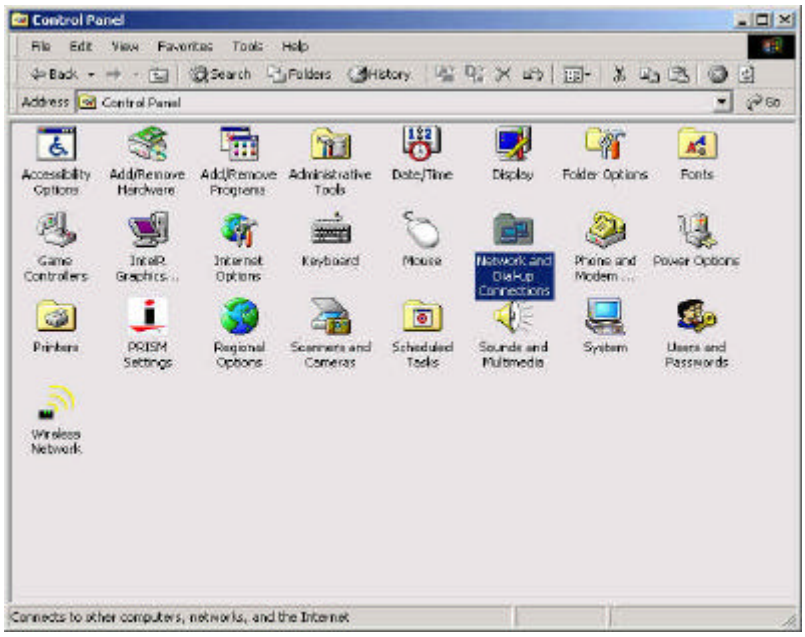


3-9. IP Sharing *(Supported under Windows 2000)*

Step 1: Change to AP mode (*see* ***Figure 3-8***).

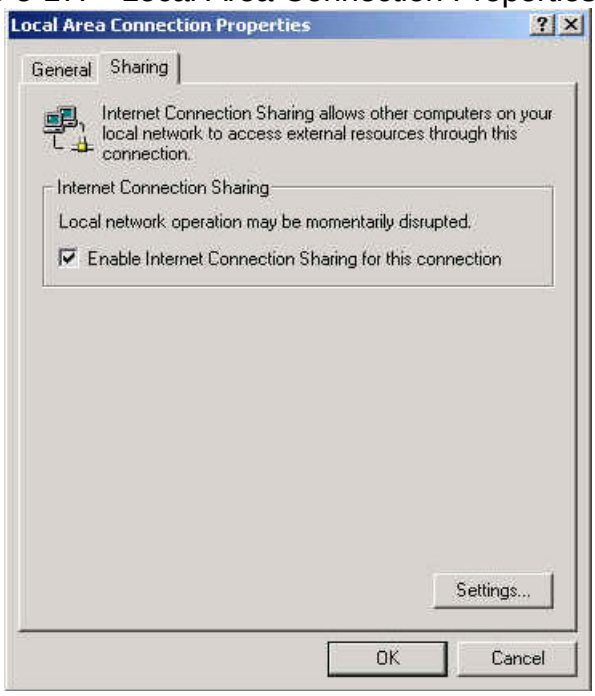
Step 2: 「**Control Panel**」run「**Network and Dial-up Connections**」 (*see* ***Figure 3-16***).

Figure 3-16. Control Panel



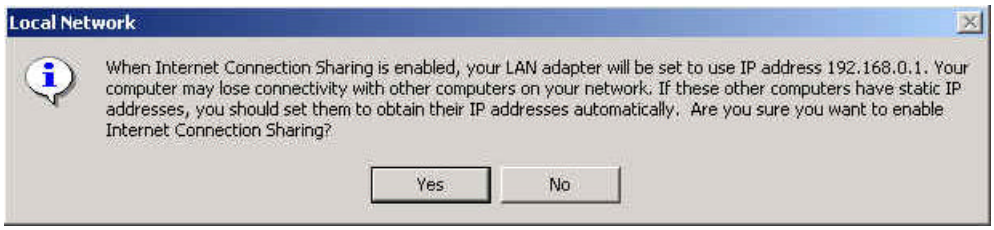
Step 3: Setup LAN card**(*see* *Figure 3-17*)**, Click **"**Enable Internet Connection Sharing for this connection**"** and Click「**OK**」.

***Figure** 3-17.* Local Area Connection Properties


Local Area Connection Properties
General
Sharing
Internet Connection Sharing allows other computers on your local network to access external resources through this connection.
Internet Connection Sharing
Local network operation may be momentarily disrupted.
Enable Internet Connection Sharing for this connection
Settings...
OK
Cancel

Step 4： Show Local Network(*see* ***Figure 3-18***). Click「OK」 and then your setup is ok.

***Figure** 3-18.* Local Network


Local Network
When Internet Connection Sharing is enabled, your LAN adapter will be set to use IP address 192.168.0.1. Your computer may lose connectivity with other computers on your network. If these other computers have static IP addresses, you should set them to obtain their IP addresses automatically. Are you sure you want to enable Internet Connection Sharing?
Yes
No

Chapter 4. Specification

System		
Standards	IEEE 802.11b compliant	
Host Interface	USB 1.1	
Modulation	1Mbps: DBPSK; 2Mbps: DQPSK; 5.5 and 11 Mbps: CCK	
Data Rate	1, 2, 5.5, 11 Mbps	
Operating Voltage	5V	
Power	Tx 320mA; Rx 230 mA; Sleep 50 mA	
Operating Range	Open space: 100 - 300m; Indoor: 30 - 100m	
RF		
Frequency Band	2.400 ~ 2.484 GHz (subject to local regulation)	
Radio Technology	DSSS (Direct Sequence Spread Spectrum)	
Number of Channel	11 Channels (US, Canada)	4 channels (France)
	14 Channels (Japan)	13 Channels (Most European countries, ETSI)
Output power	20 dBm @ Nominal Temp Range	
Receive Sensitivity	- 80dBm @ 11 Mbps date rate, 8% PER	
Antenna	One external antenna with gain of 4 dB	
Regulatory and Environmental Compliance		
EMC certification	FCC part 15 (USA)	DGT (Taiwan)
	CE (Europe)	TELEC (Japan)
Temperature Range	Operating: 0 ~ 50 degree C, Storage: -20 ~ 65 degree C	
Humidity	Max. 90% Non-condensing	
Software		
Driver	Windows 98SE/ME/2000/XP	
Roaming	Full mobility and seamless roaming	
AP Function	Supported under Windows XP	
Security	64 and 128 bit WEP	
Management Utility	Link Configuration for network join and statistics.	
Mechanical		
Dimensions	122mm * 48mm * 22mm	
Weight	61± 1 g	
Packaging	Generic, Gigabyte, private labeling optional	
LED indicator	Two LEDs indicating Link/Act status	

Note: The specifications are subject to change without notice